Randy Paura, Dynamic Laser Solution, Inc.

Bio

Randy Paura is a Professional Engineer with his own consulting business for laser materials processing and safety, Dynamic Laser Solutions, Inc. He is an engineering graduate of Waterloo with First Degree Honours in 1989. A lifelong career in the special purpose machine design and build for industrial manufacturing has provided Randy with experience in serving automotive, aerospace and heavy equipment production facilities.

Recent publications include the sections titles “Laser Weld Quality Monitoring” and “Laser Beam Weld Design, Codes and Quality Assessment” of the ASM Volume 6A “Welding Fundamentals and Processes”.
As a lifetime member of the LIA, Randy supports the LIS’s mission to foster education of lasers, laser applications and laser safety including involvement with the Z136 ASC and as Vice-Chair for ANSI Z136.9 “Safe Use of Lasers in Manufacturing Environments”.

Randy resides in his hometown of Fort Erie with his wife Monica and their three daughters, Carolyn, Grace and Rachel.

Abstracts

Risk Assessment for High Power Lasers

Risk Assessment is a positive tool for continuous improvement in safety and productivity of a high power laser system. Material presented covers well establish risk assessment standards and practices and provides a reference methodology for conducting a RA for a high power industrial laser materials processing system. The importance of an effective risk assessment is reviewed, which provides prioritized actionable measures for addressing deficiencies (in equipment safety or capabilities). While a specific template is not prescribed in regulations, common principles for evaluating and controlling risks are discussed. The scope and depth of a risk assessment effort should be commensurate with the capital value and/or the application regime of the high power laser system.

This topic is directed towards technicians/engineers/managers that are responsible for the development, implementation and/or operation of high power laser systems.

Authors: Randolph Paura, Dynamic Laser Solutions, Inc.; Roy Henderson, Bioptica; Bill Ertle, Rockwell Laser Industries, Inc.

Safety Control Measures for High Power Lasers

The continuous improvement in the capabilities of new lasing technologies such as fiber, disk, direct diode and their continued reduction in the cost of ownership has contributed to their rapid adoption and utilization in manufacturing and research. Laser product performance (build) standards identify safety objectives and minimum required control measures for systems that employ Class 4 laser power sources. This presentation identifies various safety control measures for high power lasers in the kilowatt+ class of continuous wave output power

(or equivalent in pulsed units). Reference equipment build standards are identified with these control measures. These safety control measure recommendations for consideration are drawn from best practices in industry.

This topic is directed towards technicians/engineers/managers that are responsible for the development, implementation and/or operation of high power laser systems.

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